Technical Drawings-WETHO OF INDICATING SURFACE TEXTURE ON DRAWING

(Technical Data)

Categories of surface roughness

<u>.</u>:

Definitions and indications for surface roughness parameters (for industrial products) are specified.

They are arithmetical mean roughness (Ra), maximum height (Ry), ten-point mean roughness (Rz), mean spacing of profile irregularities (Sm), mean spacing of local peaks of theprofile (S) and profile bearing length ratio (tp). Surface roughness is given as the arithmetical mean value for a randomly sampled area.

(Mean center line roughness (Ra 15) is defined in the annexes of JIS B 0031 and JIS B 0601.)

Typical ways for obtaining surface roughness

	Ra=1.50 It.s) dax	Ry=Rp+Rx	$R_{Z} = \frac{1}{ Y_{D1} \cdot Y_{D2} \cdot Y_{D3} \cdot Y_{D4} \cdot Y_{D5} \cdot Y_{D5$
Simport specific forming and state models	Arithmetical mean roughness (Ra) A section of standard length is sampled from the mean line on the roughness chart. The mean line is laid on a Cartesian coordinate system where in the mean line rush, thre direction of the x-axis and magnification is the y-axis. The value obtained with the formula on the right is expressed in micrometer (.g.m) when y=f. (X).	Maximum peak (Ry) A section of standard length is sampled from the mean line on the roughness clart. The distance between the peaks and valloys of the sampled line is measured in the y direction. The vallue is expressed in micrometer (µ m). Note: To obtain Ry, sample only the standard length. The part, where peaks and valleys are wide enough to be hindipreded as scratches, should be worked.	Ten-point mean roughness (R2) A section of standard length is sampled from the mean line on the roughness chart. The distance between the peaks and valleys of the sampled line is measured in the y direction. Then, has a verage peaks is obtained almoing facilises peaks. In a surface peak is obtained almoing callest peaks. (Yp), as it in a average valley between 5 towers valleys (IV). The sum of these two values is expressed in micrometer (µm).

X H

Ar	Arithmetical mean roughness Ra	ı roughness	Max, height Ry	Ten-point mean roughness Rz	Standard length of Ry · Rz	Triangular
Preferred number series	Cut-off value	Indication of surface texture on drawings	Preferred n	number series	r (mm)	ii dicadoli
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0.025 a	,		0.1 s	0.1-2	80.0	
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0.2 a			0.8 s	2 8.0		
0.4 a	0.8		1,6 S	1.6 2		
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※The interriependence for 3 classes is not strictly enforced.
※The evaluation lengths of Ra: Ry and Rz: Five times the cut-off value and standard length respectively.

Positions of respective indicating symbols relative to indicating symbol of surface cutoff value or reference length, processing method, symbol of direction of lay, surface waviness, etc. Each grain surface position is indicated as shown in Drawing 7 This includes surface roughness, . .

Drawing7 Entry position of each indication

a: Value of Ra

b: Processing method

c : Cutoff value · valuation length

c': Reference length · valuation length

d: Symbol of direction of lay

f: Parameter other than Ra (With tp, parameter/cutoff level) g : Surface waviness (according to JIS B 0610)

Note: Items other than a and f are added as necessary.

Reference: The location of lay of e in Drawing? is given as the finish allowance in ISO 1302.

Symbol

■Examples Indicating	Indicating symbol of surface TITITITITI Indicating symbol of surface requiring removal press	Indicating symbol of surface on which no removel process is to the control of the	the upper limits of Ramples the upper limits of Ramples (a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	Examples indicating direction of	Examples indicating the upper limit and lower limit of Ra (a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	Examples inficaling processing mel (a) Front miled (b) 32 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
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Meaning	Parallel to the projected surface on which the direction of lay of the curing blade is indicated (ex). Shaped surface	Direction of lay of cutting blacks (ox) Shaped surface (when viewed from the sta) (when viewed from the sta) (when viewed from the sta) (quantismidee)	injersection of two diagonal lines on the projected surface or which the ded ricition of jay of the which the diagonal play of (ex). Howing finished surface	Maderentual inserventus orio-directional diserventual in the special active con within the diserventual plan is instantial. (ex) Reporting institute attractional subjects and institute attractional activities and inserventual in sufficient or earl miled or sufficiently lead direction in sufficiently lead directional activities in sufficiently lead directional activities.	Concentric cicles roughly centrained on the same on the surface on which the direction of lay of the culting blade is indicated. (b) Facing surface.	Racialing shape roughly centered on the same point on the same point on the same point on the surface on which the direction of ay of the cuting blade is indicated.

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